

## CLAIMS

What is claimed is:

- 1 1. A method of searching comprising the steps of:
  - 2 receiving from a user a search query requesting information;
  - 3 retrieving at least one recommendation relating to the search query;
  - 4 generating an expanded query based on the received query;
  - 5 performing a search using the expanded query to retrieve documents; and
  - 6 generating thematic clusters relating to the retrieved documents.
- 1 2. The method of claim 1, wherein the recommendation relating to the search query
  - 2 is based on users search query logs and search pattern information.
- 1 3. The method of claim 2, wherein the recommendation is further based on user
  - 2 profile information.
- 1 4. The method of claim 3, wherein the user profile information comprises aggregate
  - 2 information.
- 1 5. The method of claim 1, wherein the at least one recommendation relating to the
  - 2 search query is retrieved from a recommendation database.

1 6. The method of claim 5, wherein the recommendation database is generated by  
2 performing the steps of:

3 performing data mining using users search query logs, user search patterns, and  
4 user profile information to generate a plurality of recommendations relating to search  
5 query strings based on the users search query logs, user search patterns, and user profile  
6 information;

7 generating a data structure including the recommendations relating to search  
8 query strings; and

9 generating a text index based on information in the data structure.

1 7. The method of claim 6, wherein the step of generating a data structure including  
2 the recommendations relating to search query strings comprises the steps of:

3 populating an initial data structure with recommendations relating to search  
4 query strings, including an equivalence table comprising a plurality of terms and/or  
5 phrases and equivalents thereof;

6 converting the plurality of terms and/or phrases and equivalents thereof to  
7 eXtensible Markup Language format; and

8 validating availability of the recommendations.

1 8. The method of claim 7, wherein the step of retrieving at least one  
2 recommendation relating to a search query string comprises the steps of:

3 parsing the received search query to generate a search query string;  
4 searching the populated data structure using the search query string to find a key  
5 associated with at least one recommendation relating to the search query string; and  
6 retrieving the at least one recommendation relating to the search query string  
7 using the key.

1 9. The method of claim 7, wherein the step of retrieving at least one  
2 recommendation relating to a search query string comprises the steps of:

3 parsing the received search query to generate a search query string;  
4 searching the populated data structure using the search query string to find a key  
5 associated with at least one recommendation relating to the search query string, and if  
6 the key is found, retrieving the at least one recommendation relating to the search query  
7 string using the key; and

8 searching the equivalence table of the populated data structure using the search  
9 query string to find an alternative key associated with at least one recommendation  
10 relating to the search query string, and retrieving the at least one recommendation for  
11 information using the alternative key, if the key is not found.

1 10. A system for searching comprising:

2 a processor operable to execute computer program instructions; and

a memory operable to store computer program instructions executable by the processor, for performing the steps of:

receiving from a user a search query requesting information;

retrieving at least one recommendation relating to the search query;

generating an expanded query based on the received query;

performing a search using the expanded query to retrieve documents; and

generating thematic clusters relating to the retrieved documents.

11. The system of claim 10, wherein the recommendation relating to the search query is based on users search query logs and search pattern information.

12. The system of claim 11, wherein the recommendation is further based on user profile information.

13. The system of claim 12, wherein the user profile information comprises aggregate information.

14. The system of claim 10, wherein the at least one recommendation relating to the search query is retrieved from a recommendation database.

15. The system of claim 14, wherein the recommendation database is generated by performing the steps of:

performing data mining using users search query logs, user search patterns, and user profile information to generate a plurality of recommendations relating to search query strings based on the users search query logs, user search patterns, and user profile information;

generating a data structure including the recommendations relating to search query strings; and

generating a text index based on information in the data structure.

16. The system of claim 15, wherein the step of generating a data structure including the recommendations relating to search query strings comprises the steps of:

populating an initial data structure with recommendations relating to search query strings, including an equivalence table comprising a plurality of terms and/or phrases and equivalents thereof;

converting the plurality of terms and/or phrases and equivalents thereof to eXtensible Markup Language format; and

validating availability of the recommendations.

17. The system of claim 16, wherein the step of retrieving at least one recommendation relating to a search query string comprises the steps of:

3 parsing the received search query to generate a search query string;  
4 searching the populated data structure using the search query string to find a key  
5 associated with at least one recommendation relating to the search query string; and  
6 retrieving the at least one recommendation relating to the search query string  
7 using the key.

1 18. The system of claim 16, wherein the step of retrieving at least one  
2 recommendation relating to a search query string comprises the steps of:

3 parsing the received search query to generate a search query string;  
4 searching the populated data structure using the search query string to find a key  
5 associated with at least one recommendation relating to the search query string, and if  
6 the key is found, retrieving the at least one recommendation relating to the search query  
7 string using the key; and

8 searching the equivalence table of the populated data structure using the search  
9 query string to find an alternative key associated with at least one recommendation  
10 relating to the search query string, and retrieving the at least one recommendation for  
11 information using the alternative key, if the key is not found.

1 19. A computer program product for performing a search in an electronic data  
2 processing system, comprising:

3 a computer readable medium;

4 computer program instructions, recorded on the computer readable medium,  
5 executable by a processor, for performing the steps of  
6 receiving from a user a search query requesting information;  
7 retrieving at least one recommendation relating to the search query;  
8 generating an expanded query based on the received query;  
9 performing a search using the expanded query to retrieve documents; and  
10 generating thematic clusters relating to the retrieved documents.

1 20. The computer program product of claim 19, wherein the recommendation  
2 relating to the search query is based on users search query logs and search pattern  
3 information.

1 21. The computer program product of claim 20, wherein the recommendation is  
2 further based on user profile information.

1 22. The computer program product of claim 21, wherein the user profile information  
2 comprises aggregate information.

1 23. The computer program product of claim 19, wherein the at least one  
2 recommendation relating to the search query is retrieved from a recommendation  
3 database.

1 24. The computer program product of claim 23, wherein the recommendation  
2 database is generated by performing the steps of:

3 performing data mining using users search query logs, user search patterns, and  
4 user profile information to generate a plurality of recommendations relating to search  
5 query strings based on the users search query logs, user search patterns, and user profile  
6 information;

7 generating a data structure including the recommendations relating to search  
8 query strings; and

9 generating a text index based on information in the data structure.

1 25. The computer program product of claim 24, wherein the step of generating a data  
2 structure including the recommendations relating to search query strings comprises the  
3 steps of:

4 populating an initial data structure with recommendations relating to search  
5 query strings, including an equivalence table comprising a plurality of terms and/or  
6 phrases and equivalents thereof;

7 converting the plurality of terms and/or phrases and equivalents thereof to  
8 eXtensible Markup Language format; and

9 validating availability of the recommendations.



1 26. The computer program product of claim 25, wherein the step of retrieving at least  
2 one recommendation relating to a search query string comprises the steps of:  
3 parsing the received search query to generate a search query string;  
4 searching the populated data structure using the search query string to find a key  
5 associated with at least one recommendation relating to the search query string; and  
6 retrieving the at least one recommendation relating to the search query string  
7 using the key.

1 27. The computer program product of claim 25, wherein the step of retrieving at least  
2 one recommendation relating to a search query string comprises the steps of:  
3 parsing the received search query to generate a search query string;  
4 searching the populated data structure using the search query string to find a key  
5 associated with at least one recommendation relating to the search query string, and if  
6 the key is found, retrieving the at least one recommendation relating to the search query  
7 string using the key; and  
8 searching the equivalence table of the populated data structure using the search  
9 query string to find an alternative key associated with at least one recommendation  
10 relating to the search query string, and retrieving the at least one recommendation for  
11 information using the alternative key, if the key is not found.